THE NEW VALUE FRONTIER

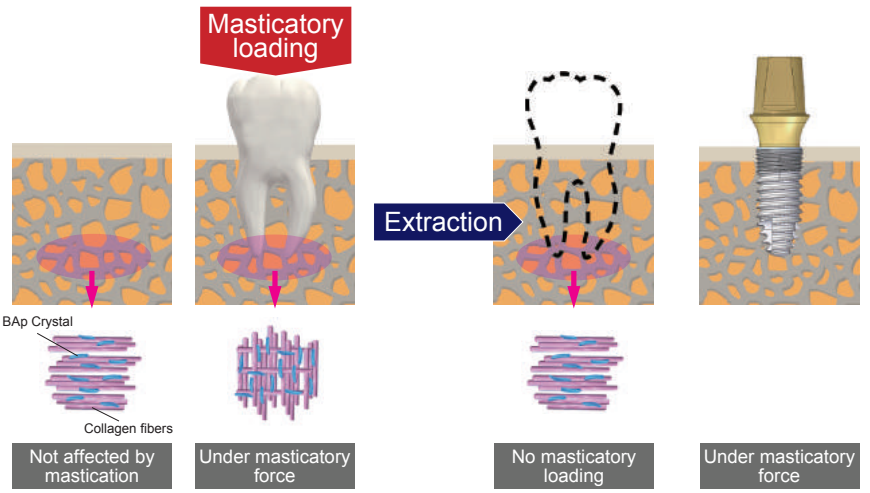
KYOCERA

FINESIA

Thread Design

Schematics of the variable apatite/collagen preferential orientations with different masticatory conditions

The masticatory load applied to the natural teeth works to align the orientation of the surrounding collagen fibers and the biological apatite (BAp) crystal with the loading direction. Thus, this preferential orientation is responsible for improving bone quality.

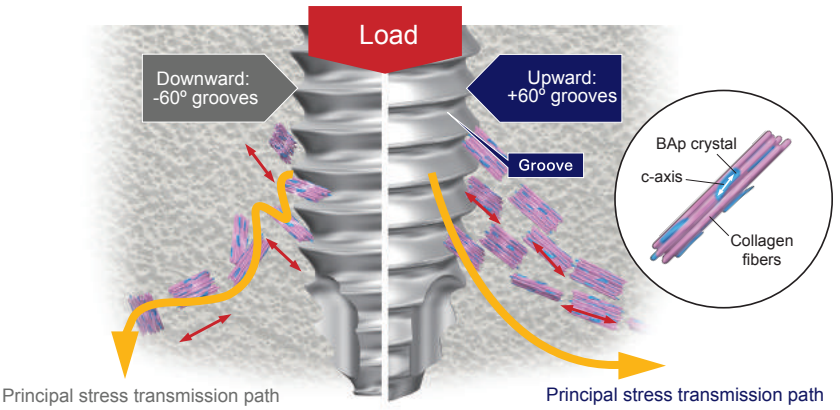


Courtesy of Dr.Takayoshi Nakano,
Biomaterials and Structural Material Design,Process Engineering Course of Material Functioning Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, Professor

[Reference]
T. Nakano, K. Kaibara, Y. Tabata, N. Nagata, S. Enomoto, E. Marukawa, Y. Umakoshi, Unique alignment and texture of biological apatite crystallites in typical calcified tissues analyzed by microbeam X-ray diffractometer system, Bone 31 (2002) 479-487.

Schematics of apatite/collagen preferential orientations around the implant

A study has reported that the loading spectrum controls the preferential orientation of the biological apatite (BAp) crystal and collagen fibers. Different preferential orientations are reported around the upward and downward grooves, as shown in the figure on the right. Furthermore, the stress is continuously transmitted under load in the upward grooves.



[Reference]
Optimally oriented grooves on dental implants improve bone quality around implants under repetitive mechanical loading. Kuroshima S,Sawase T.et al Acta Biomater.2017 Jan 15,48:433-444.(S.Kuroshima,T.Sawase et.al)

Bone Level

Bone Level type for esthetically demanding case.

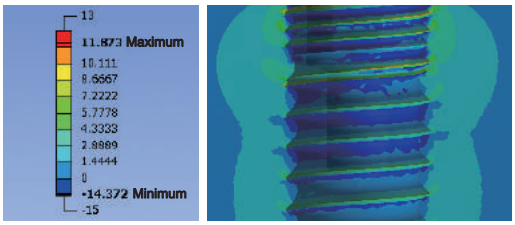
Platform switching

The implant-abutment diameter mismatch works effectively to preserve the peri-implant bone and stabilize the soft tissue.

Courtesy of Dr. Hiroyuki Inoue
(Inoue Dental Clinic, Obihiro-shi, Hokkaido)

Microthread

Microthreads are designed at the implant neck, a critical part for retention, to allow effective transmission of the load to the bone while avoiding stress concentration.



Tapered HEX Connection (8.5º per side)

The internal tapered connection (HEX) at the abutment-implant interface ensures an excellent seal.

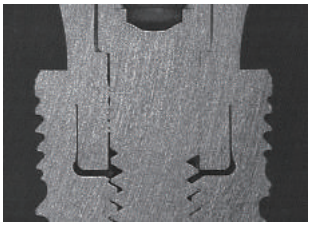
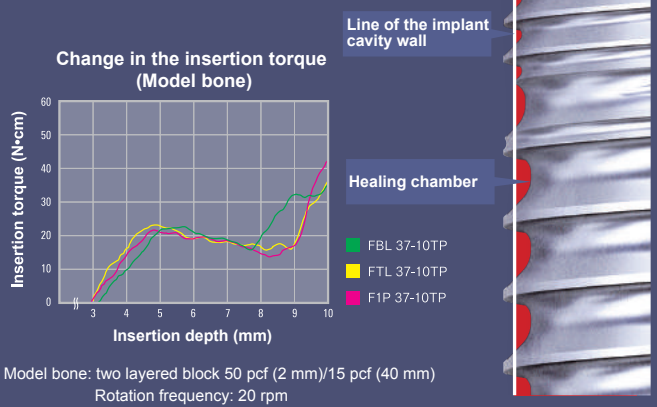


Image Courtesy of Dr. Yasuo Miake
(Tokyo Dental College, Department of Histology and Developmental Biology)

Function

Healing chamber and insertion torque

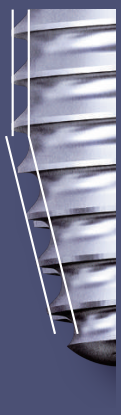
The implant cavity is prepared so that its wall line lies right between the inner and the outer thread of the implant body to form a healing chamber for blood clots to be trapped within it.



Model bone: two layered block 50 pcf (2 mm)/15 pcf (40 mm)
Rotation frequency: 20 rpm

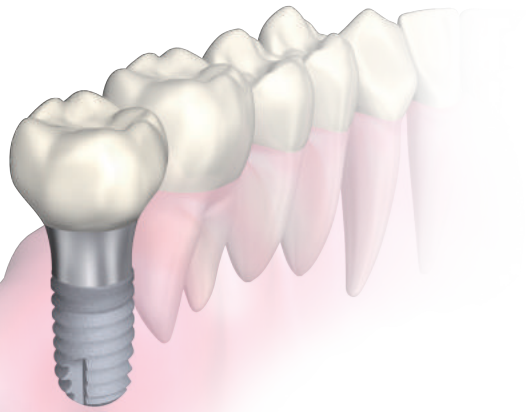
Root Tip

The threads of the root tip (apex) of the tapered type implant have deeper grooves than those of the body, effectively providing initial stability, especially in cases involving immediate implant placement after extraction.



Tissue Level

Tissue Level type for high-risk cases of periodontal diseases



Tapered OCTA Connection (8.0º per side)

The internal tapered connection (OCTA) at the abutment-implant interface ensures an excellent seal.

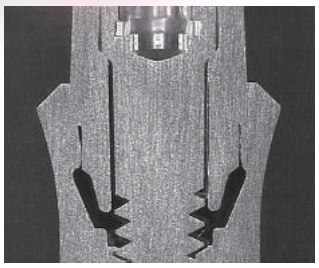
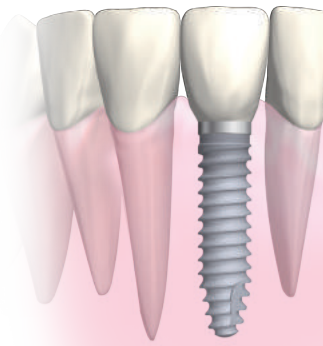


Image courtesy of Dr. Yasuo Miake (Tokyo Dental College, Department of Histology and Developmental Biology)

Concave contour

Implant collar contacting the gingiva is designed with a concave profile for excellent soft tissue management.



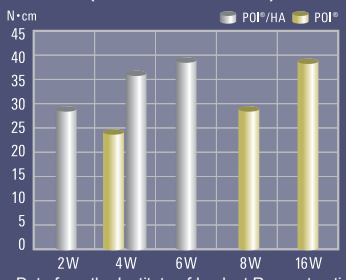
Surface treatment

HA Hydroxyapatite

HA Coating

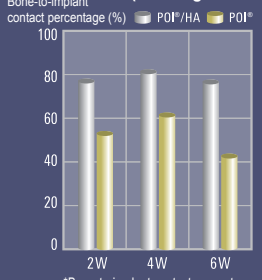
The results of the reverse rotation removal torque test suggested early osseointegration of HA-coated implants, and the calculated percentage of the bone-to-implant contact area was higher in HA-coated implants. The SEM image confirmed good osseointegration between the HA coating layer and highly calcified newly formed bone.
In the simulated body fluid soaking test, deposition of the crystalline phase, which was presumed to be an HA layer, was observed in minute areas on the surface at four hours of immersion, and this crystalline phase showed growth over time.

Reverse rotation removal torque test (domesticated rabbit)

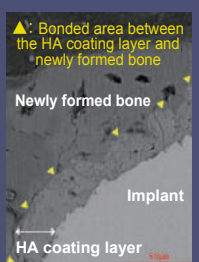


Data from the Institute of Implant Reconstruction Dentistry (1995) and the Department of Endodontics, Tokyo Dental College (1996)

Comparison of bone-to-implant contact percentage (histological tissue specimens)



*Bone-to-implant contact percentage: Percentage of the implant surface in direct contact with bone without intervening fibrous tissue



SEM image of an HA-coated implant and surrounding tissues (8W)

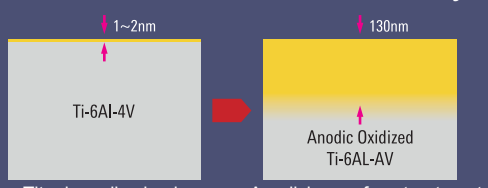
Morphological HA-coated surf simulated body

AO Anode Oxidization

Anodizing surface treatment

The surface is anodized to form a 130-nm thick oxide layer, which has excellent properties, including enhanced intraoral esthetics by the coloration.

Schematics of a cross-section of the oxide layer



Titanium alloy in air — Anodizing surface treatment

1 Piece

1 Piece type for narrow space and simple restorations

Internal torx design for insertion

The implant has an internal torx design at the top of the post part, which engages with a hexalo driver for insertion. This allows the implant to be placed more flexibly, by avoiding interference from adjacent teeth

Subgingival design

A straight subgingival profile allows the preparation of prosthetics that can be used even in limited available spaces, such as lower single tooth restorations (suitable for narrow spaces)

Prosthetics Pa

Extensive lineup of pa

As the concept of implant prosthesis changes and CAD/CAM technology advances, prosthetic designs are becoming increasingly diversified and sophisticated. Our product lineup offers a variety of parts, not only for cement and screw retained restorations and overdentures, but also for CAD/CAM restorations.

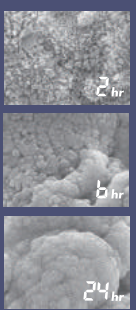
A line-up of Scan Body for IOS (Intra Oral Scanner) that can be used in the intraoral enables optical impression in the intraoral.

Scan Body for Implant Level

Scan Body for Abutment Level (Scan Body for Sprint AB)

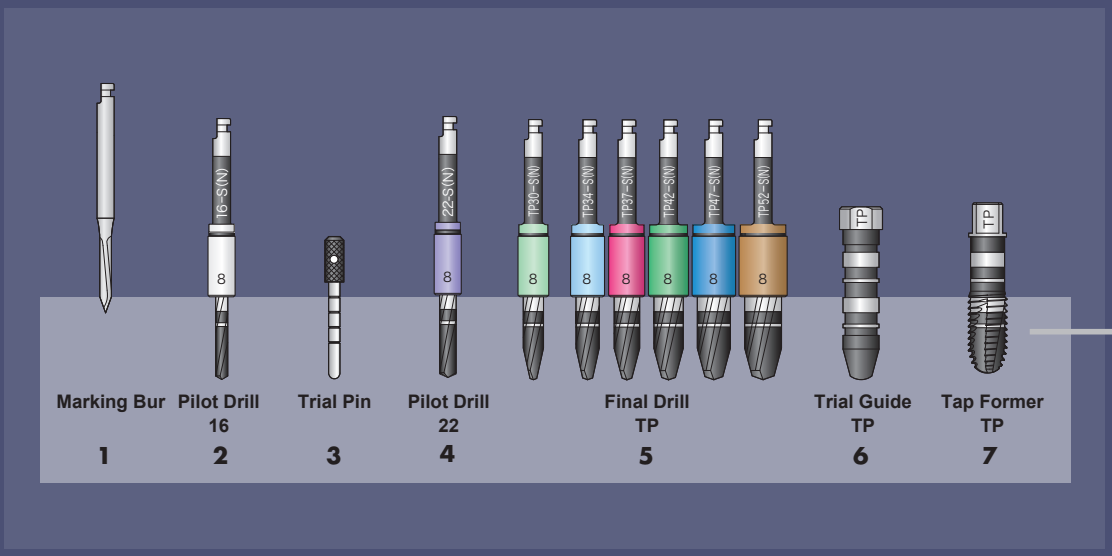
Other features

changes in the face soaked in fluid (SBF)



Universal drilling system

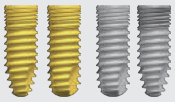
As universal design is adopted in the implant body shape, the same technique can be applied for drilling.
"Accurate and efficient cutting technology" based on Kyocera Industrial Tool department has been adopted to create this high quality Kyocera drill.

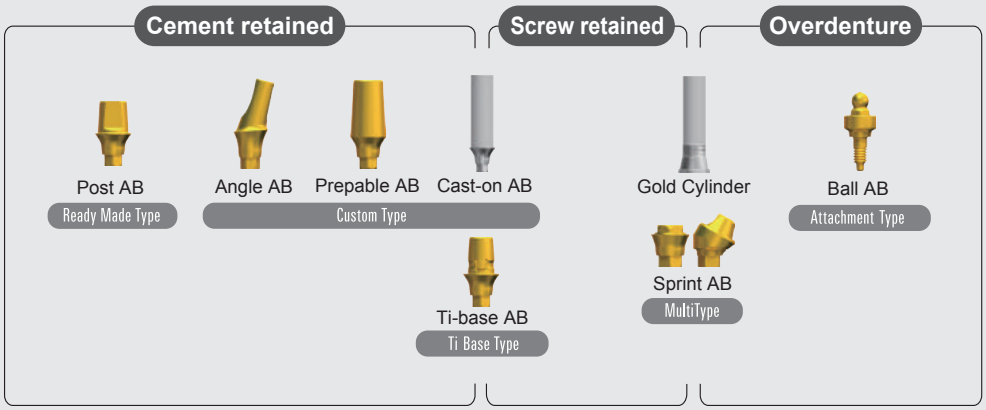


rts

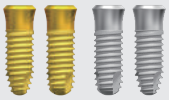
rts for more diversified and sophisticated prosthetic design

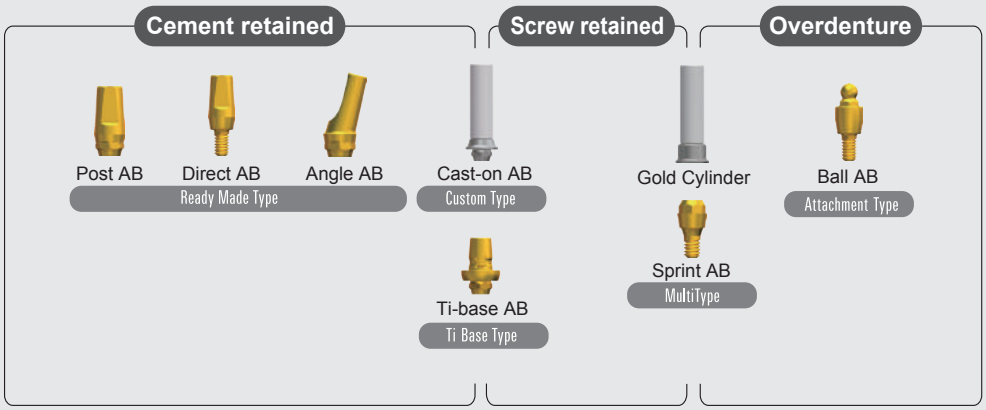
Bone Level





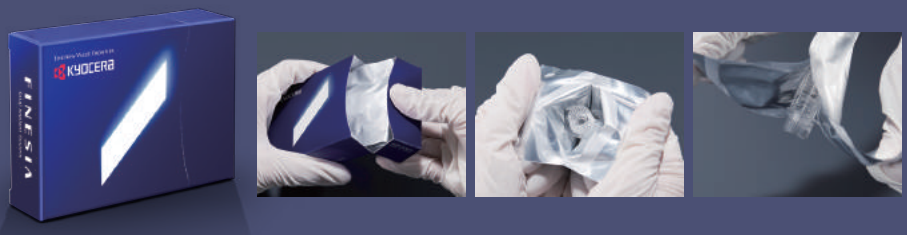
Tissue Level





Packaging for smooth opening

The outer shrink package can be opened in one step and the implant body is sealed in an aluminum pack designed to protect it from moisture.



Unique implant case

The implant case, common for all implant types (BL/TL/1P), contains a cover cap and can be handled with one hand (except 1P). It is very unique in standing and having a slide cover.

Safety Stopper

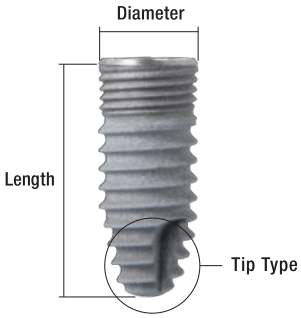
The stopper, available in 1-mm incremental lengths, fits all drills, ranging from pilot drills to final drills, to ensure safe and accurate drilling. A dedicated case is also available for easy selection of stopper and fitting with a single action.

Product

Bone Level

(Unit:mm)

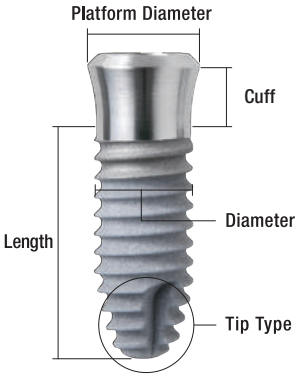
Platform	NP Narrow Platform	RP Regular Platform	WP Wide Platform
Diameter	ϕ3.2 ϕ3.4	ϕ3.7 ϕ4.2	ϕ4.7 ϕ5.2
Tip Type	Tapered type (TP) or	Straight type (ST)	
Surface	HA (HA Coating) or	AO (Anode Oxidization)	
Length	6.0 8.0 10.0 12.0 14.0 16.0		



Tissue Level

(Unit:mm)

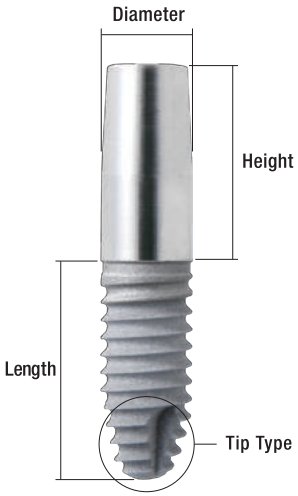
Platform	RP Regular Platform	WP Wide Platform
Platform Diameter	ϕ4.8	ϕ6.5
Diameter	ϕ3.7 ϕ4.2 ϕ4.7	ϕ4.7 ϕ5.2
Cuff	2.5 3.5	
Tip Type	Tapered type (TP) or	Straight type (ST)
Surface	HA (HA Coating) or	AO (Anode Oxidization)
Length	6.0 8.0 10.0 12.0 14.0	



1 Piece

(Unit:mm)

Diameter	Φ3.0 Φ3.2 Φ3.4 Φ3.7 Φ4.2 Φ4.7
Height	7 (S) 9 (M) 11 (L)
Tip Type	Tapered type (TP) or Straight type (ST)
Surface	HA (HA Coating) or AO (Anode Oxidization)
Length	6.0 8.0 10.0 12.0 14.0



The ANGLE,
looking upward to the future.

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